



LEWS NEWS



Photo: Melissa Hathaway, DOW

Volume I

May, 2000

Protecting Lake Erie's Natural Heritage

Welcome to LEWS News!

Welcome to the first official issue of Lake Erie water snake (LEWS) News! This newsletter is part of a joint effort between the U.S. Fish and Wildlife Service and the Ohio Division of Wildlife, who seek ways to keep island residents well informed about the Lake Erie water snake, a Federally threatened and state endangered species. The goal of this newsletter is to provide information about the status of the snake and its habitat, to describe ways that residents can help protect the snake, and to provide other educational and outreach materials. We hope island residents agree that the Lake Erie water snake is a vital part of the Islands' natural heritage that must be conserved to maintain the stability, diversity, and health of the island ecosystems.

The summer of 2000 will prove to be a key time for research on and growth of LEWS populations. Listing the snake as Federally threatened and state endangered affords it protection that will help the populations grow. Protection of the snake's habitat will allow the snake to live and reproduce peacefully, while the prohibition of "take" will limit human-induced harm. Dr. Richard King, a herpetologist that has studied the Lake Erie water snake extensively, will begin conducting a study

on the habitat, movement patterns, and hibernation sites of the snake. This study will continue on several islands over the next two years. The information gained from this study will help biologists to further understand the life history of the snake, and to better manage its habitat. The more we learn about the snake, the better we can protect it, and this protection will, hopefully, lead toward removing the snake from the Federal threatened species list.

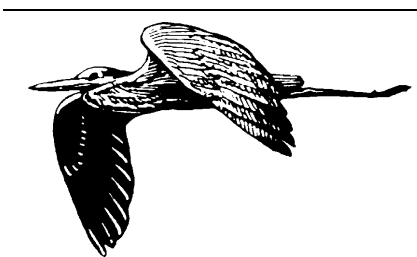


YOUR SHORELINE IS IMPORTANT! GUIDELINES ARE AVAILABLE

Are you planning to build a dock or deck or sea wall, or otherwise alter your shoreline? An important first step is to contact us early in your project planning stage, long before your project begins. Shorelines are very important to the Lake Erie water snake in terms of places to seek shelter from predators, feed, breed, hibernate, or regulate their body temperature using sun and shade. The vegetation, root masses, piled rock, cliffs, natural

rock decks, and other features along your shoreline are very important to the overall survival of the snakes.

Have you heard about the latest changes in acceptable shoreline structure designs? We encourage rock-filled crib docks with open sides and rock-lined shoreline erosion barriers because they are beneficial to water snakes. Vertical sea walls, metal sheeting, and plastic sheeting are highly discouraged because they hurt water snakes by destroying important shelter or trapping water snakes inside. Dumping fill dirt and debris over any bank can also harm water snakes. For your information, some U.S. Fish and Wildlife Service interim Lake Erie water snake guidelines are attached to this newsletter. These are "interim" guidelines because they may change over time as new information becomes available.



Early Contact is Helpful!

You can help the Lake Erie water snake and your project by talking with us early. So, who are we? We are agencies who can provide guidance to island residents regarding how best to conserve Lake Erie water snake habitat, which kinds of projects are acceptable, which projects require Federal or State permits, and useful project designs which benefit both people and water snakes. We look forward to working with you to conserve the Federally threatened Lake Erie water snake while planning your shoreline project.

U.S. Fish and Wildlife Service
6950-H Americana Parkway,
Reynoldsburg, Ohio 43068
(614-469-6923 ext. 12, 13, 16, 21, 22)

Ohio Division of Wildlife
Environmental Section, 1840 Belcher Dr.,
Columbus, Ohio 43224 (614-265-7047)

Ohio Division of Wildlife
Lake Erie Office, 305 East Shoreline Dr.,
Sandusky, Ohio 44870 (419-625-8062)

U.S. Army Corps of Engineers, Buffalo District
Corps
Orwell Field Office,
33 Grand Valley Ave., Orwell, OH 44076
(440) 437-5840

1776 Niagara St., Buffalo, NY 14207
(716) 879-4329

Ohio Coastal Zone Management Office
Ohio Dept. of Natural Resources, REALM
1952 Belcher Dr., Bldg C2,
Columbus, OH 43224 (614) 265-6413

Ohio Environmental Protection Agency, DSW
Lazarus Government Center,
PO Box 1049, Columbus, OH 42216-1049
(614) 644-2872

-Buddy B. Fazio, Endangered Species
Biologist, U.S. Fish and Wildlife
Service



THE MEANING OF THE ENDANGERED SPECIES ACT

Everyone already seems to understand that the Lake Erie Water Snake, a federal threatened species, has been protected by the Endangered Special Act since August, 1999. Most people automatically understand that it is unlawful to kill any of these species. What many people don't realize is that the Endangered Species statutes & Code of Federal Regulations, (50 CFR Chapter

17), also prohibits the “**take**” of these and every other endangered or threatened species.

“**Take**” is further defined to include pursue, “**harm**”, “**harass**”, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Everything except “harm” & “harass” seem self explanatory on their own merit. Therefore, an explanation of harm & harass is in order.

“**Harm**” means an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering.

“**Harass**” means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include but are not limited to breeding, feeding, or sheltering.

If “**harm**” includes the modification or destruction of any habitat which might impair the normal behavior of the species, and “**harass**” means

intentional or negligent annoyance of wildlife, we then can understand that the species itself, as well as its habitat, are protected by the U.S. Endangered Species Act.

SO, if you intend to do any shoreline or inland excavation work, fill, or are planning any building projects **in areas that the Lake Erie water snake might inhabit**, why not be safe and contact the US Fish & Wildlife Service to discuss your plans. We will be able to help you with your project plans, and issue the appropriate permits, eliminating potential legal problems which could arise if you act first without proper approval.

If you have any questions, or if you wish to report a violation of the Endangered Species Act, call my office at (419) 625-9713.

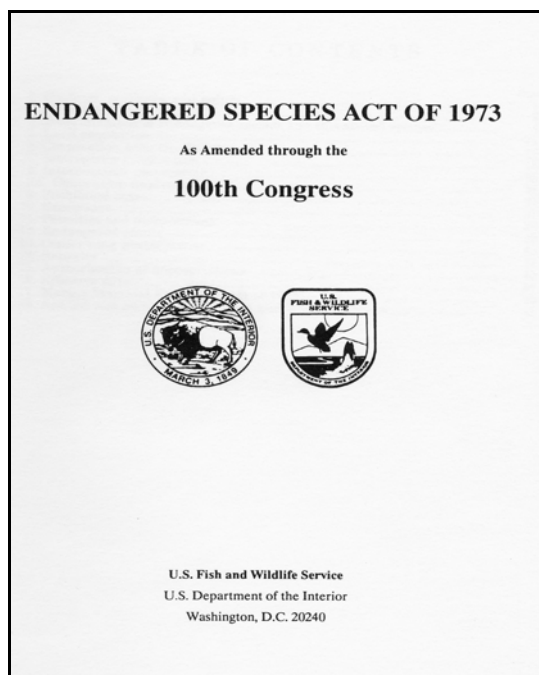
-Daniel H. LeClair, Resident Special
Agent, Law Enforcement, United
States Fish & Wildlife Service



YARD SIGNS AVAILABLE

Yard signs are still available for island residents who want to display their support for conserving Lake Erie water snakes. The 11" x 14" metal signs have been very popular since initial distribution last year. The signs are now seen on docks, trees, and cottages throughout the islands. The signs read, "Water Snakes Welcome Here; Help Us Save The Rare Lake Erie Water Snake - A Unique Part Of Our Island Heritage. Please Do Not Kill Or Harass This Non-poisonous Snake." Island residents can obtain the signs from the following locations:

South Bass Island: Ohio Division of Wildlife
Aquatic Visitors Center
1 Peach Point Road
(419) 285-3701



John Hageman,
F.T. Stone Laboratory
(419) 285-2341

Kelleys Island: Pat and Lori Hayes,
The Inn
317 W. Lakeshore Dr.
(419) 746-2258

Middle Bass Island: Middle Bass General Store
(419) 285-2608

Or call the U.S. Fish and Wildlife Service at (614) 469-6923, ext. 13 or 22, or Ohio Division of Wildlife at (419) 625-8062.

-Melissa Hathaway, Ohio Division of
Wildlife



**LAKE ERIE WATER SNAKE NOW
DESIGNATED A STATE ENDANGERED
SPECIES, A FEDERALLY THREATENED
SPECIES IN THE U.S., AND AN
ENDANGERED SPECIES IN CANADA**

Effective May 1, 2000, the Ohio Division of Wildlife designated the Lake Erie water snake a State endangered species under Ohio Administrative Code 1501:31-23-01. The Lake Erie water snake was designated a Federally threatened species in the United States on August 30, 1999, under the U. S. Endangered Species Act of 1973, as amended. State endangered status means the water snake is in danger of extirpation (i.e., disappearing) from the State of Ohio. Federally threatened status in the United States means the water snake is in danger of becoming Federally endangered throughout the geographic range in which the snake occurs. In Canada, the Lake Erie water snake is Federally designated as endangered and is protected by Ontario's provincial Endangered Species Act. The Lake Erie water snake is thus legally protected both in Ohio and in Ontario, Canada. The independent designations by the Ohio Division of Wildlife, the U.S. Fish and Wildlife Service, the Canadian Wildlife Service, and the Ontario Ministry of Natural Resources are based upon the rationale described below.

The Lake Erie water snake is a distinct genetic subspecies of water snake. Approximately 95% of the Lake Erie water snake population's gene pool occurs on the offshore islands of western Lake Erie. Lake Erie water snakes practice high site fidelity (i.e., use the same locations each year), and it has been estimated that less than 3% of adult snakes move between islands or between sites on a given island each year. It is believed that movement between islands near the mainland and off-shore islands is very limited. Experts agree that because of the unique natural barrier situation (Lake Erie islands are 3-9 miles from the mainland), the Lake Erie water snake remains a genetically distinct population from the northern water snake (*N. s. sipedon*). Lack of movement between islands and sites means that there is probably very little re-colonization of sites where the snakes have been eliminated.

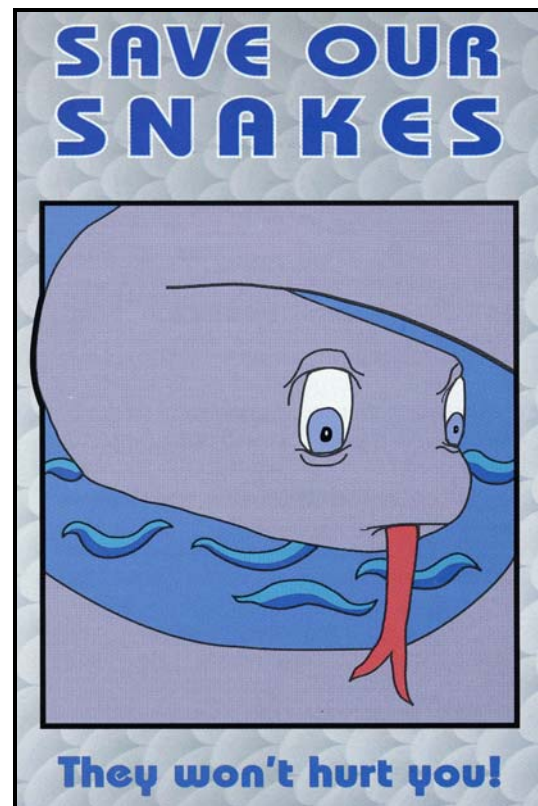
The historic distribution of the Lake Erie water snake included approximately 22 offshore islands

and rock outcrops of western Lake Erie, a portion of the Ontario mainland, and shorelines of the Catawba/Marblehead peninsula. The Lake Erie water snake has been extirpated from the Ontario mainland and four islands (West Sister, Green, Middle Sister, and North Harbour). The current population estimate ranges from 1,530-2,030 adults and is restricted to eight U.S. islands. Recent studies also show declines in population density (number of snakes/km of shoreline) on 3 of 4 U.S. islands most important to the snake's long-term survival.

Lake Erie water snakes use habitat composed of shorelines that are rocky or contain limestone shelves and ledges for sunning and shelter. Preferred shelters consist of loose rocks, piled rocks, or shelves and ledges with cracks, crevices and nearby sparse shrubbery. Lake Erie water snakes are found less often on shorelines composed of small stones, gravel, or sand. Compared to northern water snakes, the Lake Erie water snakes have reduced or no color patterns, occur on rocky habitats (as opposed to more heavily vegetated sites with soil, mud, or clay), have a different diet (composed mostly of small fish), have a larger adult body size, lower growth rates, and shorter tails.

Persecution by humans has been determined to be the most significant and well-documented factor in the decline of Lake Erie water snakes. Habitat destruction is also a major cause of the decline of the snake. During the past 60 years, important shoreline habitat has been significantly altered, degraded, and developed through the construction of shoreline cottages, marinas, docks, and sea walls, the filling of lagoons, and the mining of quarries. Due to the small population size and the tendency of the snakes to gather in dense groups, the possible combined effects of pollutants or other environmental stresses (e.g., habitat loss) or catastrophes (e.g., chemical spill) could expose Lake Erie water snakes to significant disease problems.

Small populations are more likely to fluctuate below the minimum viable population threshold needed for long-term survival. Random changes in age and sex proportions of the water snake population can cause death rates to exceed birth rates, causing a higher risk of extinction in small populations. Finally, decreasing genetic variability in small populations increases the vulnerability of a species to extinction due to inbreeding depression (decreased growth, survival, or productivity caused by inbreeding) and genetic drift (loss of genetic variability that takes place as a result of chance). In small populations, environmental, demographic, and genetic changes can result in an accelerating slide toward extinction.



Picture: Carrie Mandell, South Bass Island School

In an attempt to increase local island support for the Lake Erie water snake, the Division of Wildlife, U.S. Fish and Wildlife Service and local partners have been involved in a five-year outreach program. This year's program includes an essay and poetry contest in island schools. In past years

the program has included a school poster-drawing contest, snake-viewing field trips and programs, a poster and brochure, exhibits at local festivals and events, signs to support conservation of the snake, and regular news releases to reach visitors on the four main islands. Additional outreach efforts are being planned.

State of Ohio regulations protect the endangered species and their offspring from taking or possession. Persons who violate the wildlife laws protecting endangered species are guilty of a misdemeanor in the first degree which carries a possible 6 months imprisonment and a maximum fine of \$1,000.

- Carolyn Caldwell, Ohio Division of Wildlife
- Buddy B. Fazio, Endangered Species Biologist, U.S. Fish and Wildlife Service



HIBERNATION STUDY BEGINS IN 2000

One of the most important questions about Lake Erie water snakes is, "Where do they hibernate during the cold season"? Some observations suggest the water snake may move inland to hibernate, but how far inland do the water snakes move? Scientists seek hibernation information to better understand how to help the snake survive. Island village officials, island residents, and agency officials seek the same information for local and regional planning purposes. A new study by Northern Illinois University, the U.S. Fish and Wildlife Service, and the Ohio Division of Wildlife will help answer important hibernation questions.

The hibernation and movement study will begin on Kelleys Island during 2000 and move to the Bass Islands during 2001. Small numbers of water snakes will be outfitted with tiny radio transmitters

that allow researchers to follow water snake movements and identify the kinds of places used for winter hibernation and summer shelter. Other water snakes will be outfitted with even smaller electronic tags which allow researchers to identify each tagged snake.

If you know of places on your island where water snakes hibernate during cold months, we will appreciate hearing from you. Such information will be very helpful to scientists conducting the water snake hibernation and movement study. You may contact the U.S. Fish and Wildlife Service by dialing 614-469-6923 (extensions 12, 13, 16, 21, or 22).

- Buddy B. Fazio, Endangered Species Biologist, U.S. Fish and Wildlife Service



SHARE YOUR STORIES

Have you had any funny or interesting experiences with the Lake Erie water snake that you would like to share? Have you taken any good pictures of the snake that you would like to see in the next issue of LEWS News? If you have a story or picture that you would like to share with our readers, please send it to:

LEWS News
U.S. Fish and Wildlife Service
6950-H Americana Pkwy.
Reynoldsburg, OH 43068-4127

Please include your name, address, and daytime phone number in case we have any questions. We are looking forward to preparing the next issue of LEWS News, and we hope that you are looking forward to reading it!

